Quick Reminder: Automatic Current Limit (aka ZEUS Circuit)

- Each output channel has built in over current protection.
- As the current increases the output voltage is reduced to prevent damage to the LST tube

![Graph of HVBOX #3, HV #2](image)

- The limit circuit kicks in when the current increases beyond
  \[ I_{\text{Knee}} = \frac{\text{HVBrick} - \text{HVSet}}{500\,\Omega} \]

- Current configuration: \( \text{HVBrick} - \text{HVSet} = 1000 \, V \rightarrow I_{\text{Knee}} = 2000 \, \text{nA} \)

- Possible adjustments
  - max output Voltage (Ultravolt module) 10 KV
  - max internal voltage (resistor divider) 7.5 KV
  - max HVBrick (low bits of DAC set to 0) 7.3 KV
  - max \( I_{\text{Knee}} \) with HVSet = 5.5 KV 3600 nA

- Proposal
  - Set HVBrick to HVSet + 1500 V
  - \( I_{\text{Knee}} \) (at 5.5 KV) = 3000 nA
  - Passed 100 hrs test at OSU